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Nota di contenuto	Image Segmentation -- Automatic Segmentation of Neonatal Images Using Convex Optimization and Coupled Level Set Method -- A Unified Minimal Path Tracking and Topology Characterization Approach for Vascular Analysis -- Subject Specific Shape Modeling with Incremental Mixture Models -- Segmentation of the Infarct and Peri-infarct Zones in

Cardiac MR Images -- Spatial-Temporal Constraint for Segmentation of Serial Infant Brain MR Images -- Multi-parametric Classification of Traumatic Brain Injury Patients Using Automatic Analysis of Quantitative MRI Scans -- Image Registration -- Deformable Vessel-Based Registration Using Landmark-Guided Coherent Point Drift -- Registration of CT Segmented Surfaces and 3-D Cardiac Electroanatomical Maps -- Coronary Motion Estimation from CTA Using Probability Atlas and Diffeomorphic Registration -- A Continuity Equation Based Optical Flow Method for Cardiac Motion Correction in 3D PET Data -- Simultaneous Reconstruction of 4-D Myocardial Motion from Both Tagged and Untagged MR Images Using Nonrigid Image Registration -- Shape Modeling and Morphometry -- Cortical Sulcal Bank Segmentation via Geometric Similarity Based Graph Partition -- A Framework for 3D Analysis of Facial Morphology in Fetal Alcohol Syndrome -- Feature Driven Rule Based Framework for Automatic Modeling of Organic Shapes in the Design of Personalized Medical Prosthetics -- Manifold Learning for Image-Based Gating of Intravascular Ultrasound(IVUS) Pullback Sequences -- Automatic Computation of Electrodes Trajectory for Deep Brain Stimulation -- Shape Modeling and Morphometry -- FEM Based 3D Tumor Growth Prediction for Kidney Tumor -- Adaptive GPU Ray Casting Based on Spectral Analysis -- Metrics for Uncertainty Analysis and Visualization of Diffusion Tensor Images -- Robust 3D Reconstruction andMean-Shift Clustering of Motoneurons from Serial Histological Images -- Diffiusion Tensor Image -- DTI Connectivity by Segmentation -- Locally Weighted Regression for Estimating and Smoothing ODF Field Simultaneously -- Distinguishing Left or Right Temporal Lobe Epilepsy from Controls Using Fractional Anisotropy Asymmetry Analysis -- Hierachical Spherical Harmonics Based Deformable HARDI Registration -- Computer Assisted Intervention -- Marker-Free Registration for Electromagnetic Navigation Bronchoscopy under Respiratory Motion -- Computational Decision Support for Percutaneous Aortic Valve Implantation -- Relative Error: An Approach for in vivo Characterization of Electromagnetic Tracking Errors and Confidence Intervals -- A Motion Correction Algorithm for Microendoscope Video Computing in Image-Guided Intervention -- Least-Incision Transformable End-Effector Mechanism for Forceps for Endoscopic Surgery -- Real-Time Organ Tracking in Ultrasound Imaging Using Active Contours and Conditional Density Propagation -- Medical Image Computing -- A Malignant Breast Carcinoma Size Assessment Using Multiple Orientation Axial, Lateral, and Shear Elastographies: The Second Stage of a Pilot Study -- Level Set Diffusion for MRE Image Enhancement -- Content-Based Surgical Workflow Representation Using Probabilistic Motion Modeling -- Improved Precision in the Measurement of Longitudinal Global and Regional Volumetric Changes via a Novel MRI Gradient Distortion Characterization and Correction Technique -- Visualization and Application -- DVV: Towards a Taxonomy for Mixed Reality Visualization in Image Guided Surgery -- Three-Dimensional Ultrasound Probe Pose Estimation from Single-Perspective X-Rays for Image-Guided Interventions -- Automated Nomenclature of Upper Abdominal Arteries for Displaying Anatomical Names on Virtual Laparoscopic Images -- Hidden Markov Model for Quantifying Clinician Expertise in Flexible Instrument Manipulation -- A Robust Mosaicing Method with Super-Resolution for Optical Medical Images -- Segmentation and Classification -- Spectral Aggregation Based on Iterative Graph Cut for Sonographic Breast Image Segmentation -- Organ Pose Distribution Model and an MAP Framework for Automated Abdominal Multi-organ Localization -- Probabilistic Refinement of

Model-Based Segmentation: Application to Radiation Therapy Planning of the Head and Neck -- Skin Lesions Classification with Optical Spectroscopy -- Segmentation of Vertebral Bodies in MR Images Based on Geometrical Models in 3D -- Medical Image Understanding -- A Learning-Based Approach to Evaluate Registration Success -- Automatic Cortical Gyral Parcellation Using Probabilistic Atlas and Graph Cuts -- Hierarchical Fiber Clustering Based on Multi-Scale Neuroanatomical Features -- Neural Mass Model Driven Nonlinear EEG Analysis -- Modeling the Dermoscopic Structure Pigment Network Using a Clinically Inspired Feature Set -- Image-Guided Surgery -- An Application Driven Comparison of Several Feature Extraction Algorithms in Bronchoscope Tracking During Navigated Bronchoscopy -- Modeling Kinematics of Mobile C-Arm and Operating Table as an Integrated Six Degrees of Freedom Imaging System -- Peripheral Lung Cancer Detection by Vascular Tumor Labeling Using In-Vivo Microendoscopy under Real Time 3D CT Image Guided Intervention -- Particle-Based Deformable Modeling with Pre-computed Surface Data in Real-Time Surgical Simulation -- Direct Co-calibration of Endobronchial Ultrasound and Video -- Augmented Reality -- Real-Time Epicardial Excitation Time Map Overlay -- Knowledge-Based Situation Interpretation for Context-Aware Augmented Reality in Dental Implant Surgery -- Scorpion Shaped Endoscopic Surgical Robot for NOTES and SPS With Augmented Reality Functions -- Optimisation of Focal Length Using a Stereoscopic Operating Microscope for Augmented Reality Surgical Guidance -- An Efficient Graph-Based Deformable 2D/3D Registration Algorithm with Applications for Abdominal Aortic Aneurysm Interventions.

Sommario/riassunto

The 5th International Workshop on Medical Imaging and Augmented Reality, MIAR 2010, was held at the China National Convention Center (CNCC), B- jing, China on September 19–20, 2010. MIAR has remained a truly international meeting, bringing together - searchers from all ? elds related to medical image analysis, visualization and targeted intervention.In recent years,technical advances in therapeutic delivery andagrowingdemandforpatient-speci? ctreatmenthaveacceleratedtheclinical applications of MIAR-related techniques. Imaging plays an increasingly imp- tant role in targeted therapy, with interventions such as drug or gene therapy relying on more accurate delivery tailored to individual patients. Rapid progress in surgical methodologies, such as those with robot assistance, demands p- cise guidance from both preoperative and intraoperative imaging. The volume of data available from existing and emerging imaging modalities leads to a - sire for more automated analysis for diagnosis, segmentation and registration. Research in this rapidly developing area is highly multi-disciplinary, integrating research in life sciences, physical sciences, engineering, and medicine.